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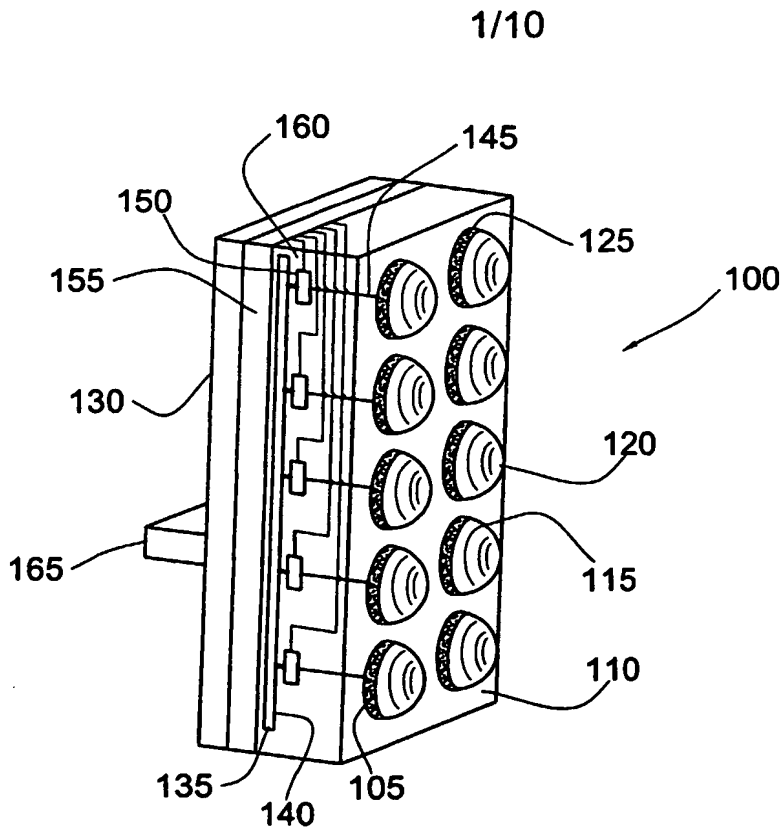
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[Continued on next page]

(54) Title: IMPLANTABLE MEDICAL DEVICE FOR CONTROLLED RELEASE OF A SUBSTANCE



(57) Abstract: A medical device for controlled release of one or more substances into a body cavity containing an electrolytic fluid, such as a urinary bladder. The device comprises a plurality of blister-like vesicles (105,205) mounted on a first surface, each vesicle having at least a metallic portion (125,225) formed from a first metal. The metallic portion of each vesicle is electrically connected to a first terminal (140,240) of a power supply (135,235) via a switch (150,250), so as to allow the metallic portion to function as an anode when the switch is closed. A cathode (130,230) is formed from a second metal and is attached to the second terminal of the power supply. The cathode is separated from the anodes by a space that is assessable by the electrolytic fluid when the device is in the body cavity.

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European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/IL 03/00914

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61K9/00 A61N1/30 A61M31/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A61K A61N A61M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	WO 01 35928 A (MICROCHIPS INC) 25 May 2001 (2001-05-25) page 25, line 21 page 29, line 15 -page 30, line 22 page 10, line 26 -page 11, line 11 figures 1,2D	1,2,4-6, 12,14-16 3,7-11, 13,17-24
Y	US 2002/082551 A1 (YACHIA DANIEL ET AL) 27 June 2002 (2002-06-27) claims 1-23	3,7-11, 13,17-24
A	WO 02 30401 A (MICROCHIPS INC) 18 April 2002 (2002-04-18) figure 1	1-24
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 01 41736 A (MASSACHUSETTS INST TECHNOLOGY) 14 June 2001 (2001-06-14) page 8, line 7 - line 29 ---	1-24
A	US 2002/138067 A1 (SHEPPARD NORMAN F ET AL) 26 September 2002 (2002-09-26) the whole document ---	1-24
A	US 2002/119176 A1 (MECH BRIAN V ET AL) 29 August 2002 (2002-08-29) the whole document ---	1-24
A	US 6 123 861 A (SANTINI JR JOHN T ET AL) 26 September 2000 (2000-09-26) the whole document -----	1-24

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL 03/00914

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 25-28
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0135928	A	25-05-2001	AU 1616201 A	30-05-2001
			CA 2392006 A1	25-05-2001
			EP 1229901 A1	14-08-2002
			JP 2003513755 T	15-04-2003
			WO 0135928 A1	25-05-2001
			US 2002173745 A1	21-11-2002
			US 2003100865 A1	29-05-2003
			US 6491666 B1	10-12-2002
US 2002082551	A1	27-06-2002	US 6293923 B1	25-09-2001
			AU 3189100 A	04-10-2000
			AU 3320200 A	04-10-2000
			CA 2365447 A1	21-09-2000
			CA 2365452 A1	21-09-2000
			EP 1161199 A1	12-12-2001
			EP 1161200 A1	12-12-2001
			WO 0054701 A1	21-09-2000
			WO 0054702 A1	21-09-2000
			JP 2002538888 T	19-11-2002
			JP 2002538889 T	19-11-2002
			US 2002055730 A1	09-05-2002
			US 2002165427 A1	07-11-2002
WO 0230401	A	18-04-2002	AU 2445302 A	22-04-2002
			WO 0230401 A2	18-04-2002
			US 2002138067 A1	26-09-2002
WO 0141736	A	14-06-2001	AU 4513101 A	18-06-2001
			CA 2393603 A1	14-06-2001
			EP 1235560 A2	04-09-2002
			JP 2003516343 T	13-05-2003
			WO 0141736 A2	14-06-2001
			US 2002107470 A1	08-08-2002
US 2002138067	A1	26-09-2002	AU 2445302 A	22-04-2002
			WO 0230401 A2	18-04-2002
US 2002119176	A1	29-08-2002	US 2003080085 A1	01-05-2003
			WO 02067770 A2	06-09-2002
			US 2002120296 A1	29-08-2002
US 6123861	A	26-09-2000	US 5797898 A	25-08-1998
			AT 216219 T	15-05-2002
			CA 2258898 A1	08-01-1998
			DE 69712063 D1	23-05-2002
			DE 69712063 T2	24-10-2002
			DK 914092 T3	12-08-2002
			EP 0914092 A2	12-05-1999
			ES 2176768 T3	01-12-2002
			JP 2000513725 T	17-10-2000
			PT 914092 T	30-09-2002
			WO 9800107 A2	08-01-1998